

Patent Claims

1. A piezotransformer that is divided into an input region and an output region, characterized in that at least one of these two regions is sub-divided into at least 2 sections (13-16, 212-215, 301-304, 401-404, 512-513), mutually adjacent sections being polarized inversely from one another in at least one region, and at least one of these two regions being polarized in the longitudinal direction.

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2. The piezotransformer as claimed in claim 1, the input region being subdivided into at least two sections (13, 14, 212-215, 301, 302, 401, 402, 512, 513), characterized in that a first input terminal (2, 200) is connected to an electrode (6, 205) that is arranged such that it acts at the connecting site of two sections (13, 14, 213, 214), while a second input terminal (2, 201) is connected to electrodes (5, 7, 204, 206) that are arranged such that they act at the side of the abovementioned sections (13, 14, 213, 214) which is averted from the connecting site.

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25 3. The piezotransformer as claimed in claim 2, characterized in that the sections (13, 14, 212-215, 301, 302, 401, 402, 512, 513) of the input region have the same dimensions in the longitudinal direction.

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35 4. The piezotransformer with two output terminals as claimed in claim 1, the output region being subdivided into at least two sections (15, 16, 303, 304, 403, 404), characterized in that each output terminal (3, 4, 503, 504) is connected to one electrode (7, 8) each that is arranged such that it acts in the longitudinal direction only at an outer

side of an externally situated section (15, 16, 303, 304, 403, 404).

5. The piezotransformer as claimed in claim 4, characterized in that the sections (15, 16, 303, 304, 403, 404) of the output region have the same dimensions in the longitudinal direction.
10. The piezotransformer as claimed in claims 3 and 5, characterized in that the ratio for the dimensions of the sections of the output region (15, 16, 303, 304, 403, 404) referred to the dimensions of the sections (13, 14, 212-215, 301, 302, 401, 402, 512, 513) of the input region is integral in each case in the longitudinal direction.
15. The piezotransformer as claimed in one of claims 1-6, characterized in that the input terminals (1, 2, 200, 201, 501, 502) are interchanged with the output terminals (3, 4, 503, 504).
20. The piezotransformer as claimed in one of claims 1-7, characterized in that the piezotransformer has the shape of a cuboid.
25. The piezotransformer as claimed in one of claims 1-7, characterized in that the piezotransformer has the shape of a disk.
30. 10. The piezotransformer as claimed in one of claims 1-7, characterized in that the piezotransformer has the shape of a ring.
35. 11. The piezotransformer as claimed in one of claims 1-7, characterized in that the piezotransformer has the shape of a cylinder.

12. The piezotransformer as claimed in one of claims 1-7, characterized in that the piezotransformer has the shape of a tube.

5 13. A piezotransformer that is divided into an input region and an output region, characterized in that at least one of these two regions is subdivided into a first and a second section (512, 513) that are transversely polarized, each section having a pair 10 of electrodes (505, 506, 507, 508) that are connected to one another and to a pair of terminals (501, 502) such that a given voltage at said terminals (501, 502) in the first section generates an electric field that runs in the direction of polarization of the first section, while it generates in the second section an electric field that runs counter to the direction of polarization 15 of the second section.